

in the case before us, can only amount to a small fraction of that of *Jupiter*, it will be allowed that the correction-factor for determining the perturbations from the longitude-equations must be regarded as referring to the mass of *Jupiter* alone, because, owing to its smallness, its multiplication into the perturbations of *Saturn* can only give imperceptibly small quantities." The author feels bound to consider also the perturbations produced by *Mars*, although it is easy to show that that planet has but a trifling effect on the motions of *Themis*, yet, owing to the near commensurability of their mean motions, there arises a perturbation-term of long period, which in so short a time as twelve years, is insignificant, but in a longer interval would have to be taken into account. With the exception of some places in 1860, derived from observations made at Berlin, and which Krüger thinks are affected by some error in the elements of the very faint stars of comparison made use of, the agreement he obtains between the calculated and observed places is very close. The uncertainty in those places cannot appreciably affect his final result which I have previously mentioned, "*that the observations of Themis require an augmentation of Bessel's mass of Jupiter, amounting to the $\frac{68}{100000}$ -th part of its value.*" This gives for the actual mass of *Jupiter* compared with the Sun, the fraction $\frac{1}{1047.158}$, almost exactly equal to the mean of the values determined by Airy and Bessel from the motions of the satellites.

Observations of the New Variable T Coronæ.

By J. Baxendell, Esq.

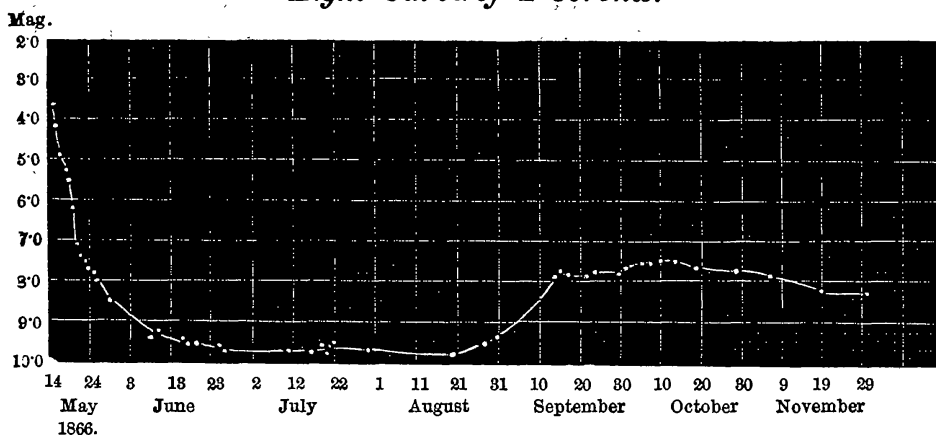
Since Mr. Huggins communicated my early observations of this star to the Society (*Monthly Notices*, vol. xxvi. p. 277), I have observed it as often as the state of the weather and other circumstances would permit; and having lately carefully re-determined the magnitudes of the stars with which I have compared it during its changes, and made a fresh reduction of all my observations, I now submit the results to the Society, believing that a projection of the entire series will give as correct a representation of the course of the star's changes up to the present time as can well be obtained. All the observations after the star became invisible to the naked eye were, with only three exceptions, made at Mr. Worthington's Observatory with his equatorially mounted achromatic of 5 inches aperture, and always with the same eyepiece, a positive, having a magnifying power of 68 times.

In the scale of magnitudes which I have employed the

light-ratio is 2.512; it will, therefore, be easy to calculate the relative intensities of the star's light at different times, and thus obtain an estimate of the degree of reliance to be placed upon the results of observations made with the spectroscope.

From the following results it will be seen that for several days after my first observation the brightness of the star diminished with great rapidity, and afterwards more gradually, and that on the 26th of June it had sunk to the 9.7 magnitude. It then remained with little change till about the 20th of August, when another rise commenced, and on the 15th of September it had attained the 7.8 magnitude. On the 10th and 14th of October it was of the 7.5 magnitude, and since the latter date its brightness has again slightly diminished.

Light-Curve of T Coronæ.



Observations of T Coronæ.

Date. 1866.	Mag.	Colour, &c.
May 15	3.7	White, with a very slight yellow tinge; whiter than ϵ .
16	4.2	Cream-coloured, but the light very bright and star well-defined, without any hazy appearance.
17	4.9	With naked eye, cream-coloured; exactly similar to ϵ .
	5.1	With 5 in <i>Ach.</i> p. 68.
18	5.3	Cream-coloured or buff; at times I have an impression of a blue tinge, as if the yellow of the star were seen through a film of a blue tint.
19	5.6	Deep cream, buff, bath-brick, or wash-leather colour, with a tinge of blue over it. ϵ the same colour, but perhaps slightly lighter, and without the blue, or at least with excessively little of it. Repeatedly examined also by Mr. Dancer and Mr. Williamson with different powers, and their estimations of colour precisely the same as my own.

New Variable T Coronæ.

7

Date. 1866.	Mag.	Colour, &c.
May 20	6.2	Buff-coloured, with a tinge of blue, and deeper than : <i>Coronæ</i> , which is yellow or light buff.
21	7.1	Leaden, or slaty blue; the yellow colour has almost entirely disappeared.
22	7.4	The light of the star is dull, and is of a slaty blue or dark French-white colour, or nearly like Smyth's No. 4, blue. No trace of yellow or red can be clearly made out.
23	7.5	Dull grey or French white. Sometimes there seems to be a trace of yellow.
24	7.7	Dull white, with a slight tinge of yellow or orange.
25	7.8	Dull, and slightly orange-white. A shade of blue some- times suspected.
26	8.0	Dull orange white.
29	8.4	Dull orange yellow.
June 8	9.3	Dull orange yellow.
10	9.2	Dull orange yellow.
16	9.4	
17	9.5	
19	9.5	
25	9.6	Orange yellow.
26	9.7	Orange.
July 11	9.7	Dull yellow.
16	9.7	
19	9.6	
20	9.7	
21	9.6	
22	9.5	Dull pale orange.
30	9.7	Orange yellow.
Aug. 20	9.8	
27	9.5	
31	9.3	Dull yellow.
Sept. 14	7.9	Dull yellow; almost exactly Smyth's No. 3 yellow.
15	7.8	Yellow.
17	7.9	Pretty bright yellow.
22	7.9	
24	7.8	Yellow.
30	7.8	
Oct. 1	7.7	
6	7.6	Greyish yellow.

8 *Mr. Stone, on the Identity of the Variable T Coronæ.*

Date.	Mag.	Colour, &c.
1866. Oct. 8	7.6	
10	7.5	Yellow.
14	7.5	Light yellow.
19	7.7	Light yellow.
28	7.8	Yellow.
Nov. 6	7.9	Smyth's orange No. 4.

It will be noticed that in the recent observations no mention is made of the blue tinge which formed so striking a feature for some time after the star's first appearance.

I may state that on the night of the 7th of May I observed all the naked-eye Variables then visible, and also several of the telescopic ones; and, among the latter, two in the constellation *Corona*, but this star, if at that time really visible, entirely escaped my notice. The nights between the 7th and 15th were cloudy at Manchester; but on the latter date the sky being very clear, the new star at once arrested my attention on proceeding to make my usual observations of the naked-eye Variables.

Cheetham Hill, Manchester,
Nov. 8, 1866.

On the Identity of the variable T Coronæ with a Star contained in Wollaston's Catalogue. By E. J. Stone, Esq.

In the *Monthly Notices*, vol. xxvi. No. 8, will be found an extract from a letter of Mr. Graham's, in which attention is drawn to a supposed observation of a system near T *Coronæ* in Wollaston's Catalogue. In that Catalogue, Zone 63° N.P.D. will be found the following observation:—

R.A. 15^h 51^m ± N.P.D. 63° 29' ±

“Double (Hers. v. 75), v.v. uneq....dist. 41'' 12'''...pos. 16° s.f. It is really quadruple, for the small star is double, and there is a still smaller at about 40° s.p. the small ones.”

The epoch of Wollaston's Catalogue is Jan. 1, 1790. If we bring up the place of this system to the year 1866 we obtain:—

R.A. 15^h 54^m ± N.P.D. 63° 41' ±

The place of the variable T *Coronæ* for the same epoch is—

R.A. 15^h 54^m 53^s.8 N.P.D. 63° 41' 52'' 9.